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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,276	01/30/2000	Bill J. Pope	6062 P	3222

7590 01/21/2004

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EXAMINER

PELLEGRINO, BRIAN E

ART UNIT	PAPER NUMBER
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3738

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/494,276

Applicant(s)

POPE ET AL.

Examiner

Brian E Pellegrino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-16, 18-30 and 34-82 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-16, 18-30 and 34-82 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## **DETAILED ACTION**

### ***Claim Objections***

Misnumbered claims 22-26 have been renumbered 23-27. There was a second claim numbered 22, which was renumbered as claim 23 and so on. The dependency was also changed for the claims originally depending from claim 23 to depend from new claim 24. Misnumbered claims 38-83 have been renumbered 37-82. There was no claim 37 present, thus claim 38 was renumbered as claim 37 and 51 was renumbered as claim 50 etc. The claims depending from claims 51 and 69 were changed to depend from renumbered claims 50 and 68 respectively.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3,6-16,18-30,34-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buechel et al. (5702448) in view of Frushour (5011515). Fig. 1 of Buechel shows a femoral head 18 having a convex articulating surface. Buechel et al. disclose a prosthetic device with a smooth articulating surface having a substrate coated with diamond, col. 10, lines 27-42 and col. 11, lines 1-4. Buechel also discloses to polish the coating, col. 8, lines 47-49 and col. 9, lines 23-25. See col. 6, lines 37-56 for metals used for the substrate. Buechel et al. additionally disclose that CoCr can be used as the metal, col. 10, lines 57-58. It is inherent that the materials have CTEs and

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moduli that are different since the substrate and coating are different. The coating formed on the substrate is crystalline in structure, col. 8, lines 1-2 and can be interpreted to include interstitial spaces in diamond layer since it has "pores" lines 4-6. It is also inherent that some  $sp^3$  bonds are formed in the coating process, well known in the art, i.e. sintering. However, Buechel does not explicitly disclose a transition zone is formed between the substrate and the diamond or to have substrate surface topographical features. Frushour teaches that composites of diamond joined with metal substrates used in applications *requiring high abrasion resistance* are attached by high temperatures and pressure, col. 1, lines 9-16. The metal substrate inherently provides a solvent-catalyst. Frushour also teaches to use irregularities in the substrate surface to increase the surface area for bonding, col. 3, lines 13-21. Frushour additionally teaches the topography can be established prior to sintering, col. 4, lines 63-67. It would have been obvious to one of ordinary skill in the art to use the method of joining diamond with a substrate and have a transition zone as taught by Frushour in the femoral head of Buechel such that the attachment is more stronger. The motivation to use Frushour's teaching to form a high impact and abrasion resistant device is that hip joints require great resistance to wear resulting from the pressures exerted on the femoral head.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1,24,50,68,81 have been considered but are moot in view of the new ground(s) of rejection.

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**Conclusion**

**THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Pellegrino whose telephone number is (703) 306-5899. The examiner can normally be reached on Monday-Thursday from 8am to 5:30pm. The examiner can also be reached on alternate Fridays. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-2708. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

TC 3700, AU 3738

Brian E. Pellegrino



David Willse

Primary Examiner

